

CLAIMS

What is claimed is:

1 Claim 1. A lightweight weapon [10], comprising:

2
3 a frame member [14];

4 a barrel receiving passage [22] in said frame member;

5 a projectile-receiving breech chamber area [48] in said frame member in
6 operative position for receiving a projectile to be displaced toward said barrel
7 passage;

8 at least one displaceable element [e.g. 50] mounted in movable
9 relationship to said frame member;

10 said frame member being formed of a plurality of lamination body
11 members [60] and having an operative recess [e.g. 52] therein for
12 accommodating at least a portion of said displaceable element, said recess being
13 defined by a base surface [56] formed on a first lamination body member and
14 at least one side wall [54] formed on a second lamination body member
15 extending a given distance from said base surface to define a depth dimension
16 of said recess;

17 said lamination body members being non-integral with each other and
18 being secured to each other in laminar relationship.

1 Claim 2. A lightweight weapon [10] in accordance with Claim 1, wherein:

2 said side wall [54] of said recess [52] comprises a plurality of laminations
3 [54A, 54B] that together define said depth dimension of said recess.

1 Claim 3. A lightweight weapon in accordance with Claim 2, wherein:

2 said plurality of laminations are joined together by capture riveting.

1 Claim 4. A lightweight weapon in accordance with Claim 2, wherein:
2 said plurality of laminations are joined together by molecular bonding.

1 Claim 5. A lightweight weapon in accordance with Claim 2, wherein:
2 said plurality of laminations are joined together by cold welding.

1 Claim 6. A lightweight weapon in accordance with Claim 1, wherein:
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3 said weapon is a hand-held firearm and said frame has a grip portion
4 associated therewith.

1 Claim 7. A lightweight weapon in accordance with Claim 1, wherein:
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3 said weapon is a hand-held firearm and said frame has a trigger and a trigger
4 guard associated therewith.

1 Claim 8. A lightweight weapon in accordance with Claim 7, wherein:
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3 said frame further has a trigger guard thereon associated with said trigger.

1 Claim 9. A lightweight weapon in accordance with Claim 7, wherein:
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3 said hand-held firearm has a hammer element [24] associated with said frame.

1 Claim 10. A lightweight weapon in accordance with Claim 1, wherein:
2 said frame [14] comprises a plurality of laminations [60] firmly joined
3 together; at least one of said laminations [60C] defining at least part [54A] of
4 the depth dimension of said recess [52], and another of said laminations
5 defining the base surface [56] of said recess.

1 Claim 11. A lightweight weapon in accordance with Claim 10, wherein:
2 the material of at least one of said laminations is different from the
3 material of said base surface.

1 Claim 12. A lightweight weapon in accordance with Claim 10, wherein:
2 the material of at least one of said laminations is plastic.

1 Claim 13. A lightweight weapon in accordance with Claim 10, wherein:
2
3 the material of at least one of said laminations is stainless steel.

Claim 14. A lightweight weapon in accordance with Claim 10, wherein:

the material of at least one of said laminations is aluminum.

1 Claim 15. A lightweight weapon in accordance with Claim 10, wherein:
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3 the material of at least one of said laminations is graphite.

1 Claim 16. A lightweight weapon in accordance with Claim 10, wherein:

2
3 the material of at least one of said laminations is an alloy of titanium.

1 Claim 17. A method of fabricating elements [e.g. 14, 80] of a lightweight
2 firearm weapon [10], said method comprising the steps of:

3
4 selecting three coordinate axes defining said elements of said weapon in three
5 dimensions;

6 forming thin laminations [60] defining said elements, said laminations
7 corresponding to plan views of said elements parallel to two of said coordinate
8 axes taken at sequential positions along the third of said coordinate axes;

9
10 securely fastening said sequential laminations to each other to define a three-
11 dimensional element wherein the thickness of said element represents the
12 cumulative thickness of each of said laminations, combined.

1 Claim 18. The method of Claim 17 wherein:

2
3 said step of securely fastening said sequential laminations to each other
4 comprises adhesive bonding.

1 Claim 19. The method of Claim 17 wherein:

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3 said step of securely fastening said sequential laminations to each other
4 comprises capture riveting.

- 1 Claim 20. The method of Claim 17 wherein:
- 2
- 3 said step of securely fastening said sequential laminations to each other
- 4 comprises molecular bonding.